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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,915	03/31/2004	Hiroshi Satoh	023484-0161	5697

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EXAMINER

BROADHEAD, BRIAN J

ART UNIT	PAPER NUMBER
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3661

DATE MAILED: 09/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/812,915	Applicant(s) SATO ET AL.	
	Examiner Brian J. Broadhead	Art Unit 3661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7-9 is/are allowed.
- 6) ☒ Claim(s) 1-6 and 10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 2, 3, 5, and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Tange et al., 2004/0107035.

3. Tange et al. disclose a camera photographing a travel path in a traveling direction of a vehicle in paragraph 18; a lateral displacement calculating circuit that calculates a lateral displacement of the vehicle with respect to the travel path according to an image of the travel path photographed by the camera in paragraph 18; a differentiator that calculates a differential value of the lateral displacement in paragraph 28; a vehicle speed sensor that detects a vehicle speed in paragraph 19; a relative yaw rate calculating section that calculates a relative yaw rate with respect to the travel path of the vehicle on the basis of the lateral displacement, the differential value of the lateral displacement, and the vehicle speed in paragraph 32; an actuator that provides an assistance force for the steering mechanism and an actuator controlling section that drivingly controls the actuator in a direction toward which the relative yaw rate is canceled on the basis of the relative yaw rate in paragraph 39; the lateral displacement

calculating circuit comprises: a white line recognition circuit that recognizes white lines located on both ends of the traveling path; a center position calculating circuit which calculates a center position between both ends of the travel path; and a deviation quantity calculating circuit that calculates a lateral displacement of the vehicle with respect to the center position of the travel path in paragraph 18; the white line recognition circuit recognizes the white lines a predetermined distance ahead of the vehicle and the deviation quantity calculating section calculates a variation rate of a relative angle between the center position of the white line and the vehicle in paragraph 18; the differentiator comprises a filter processing circuit in paragraphs 30 and 31.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tange et al., 2004/0107035.

6. Tange et al. disclose the limitations as set forth above. They do not explicitly disclose the steering sensor is a torque sensor but so mention any steering sensor may be used in paragraphs 30 and 31. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a torque sensor as the steering sensor because is it a design choice. Official notice is taken that it is widely known in the art that using different steering sensors can be used to accomplish the same goal.

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7. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tange et al., 2004/0107035, in view of Matsumoto et al., 2004/0153228.

8. Tange et al. disclose the limitations as set forth above. They do not disclose the actuator is a steering actuator. Matsumoto et al. (same inventors) discuss that either a steering actuator or driving torques can be used interchangeable in a lane deviation prevention system in paragraph 2. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a steering actuator instead of driving torque to influence the steering because it is a design choice which would provide no unexpected results. Matsumoto et al. may disclose that a steering actuator may not be the best mode, but this disclosure doesn't make it any less obvious to one of ordinary skill.

Allowable Subject Matter

9. Claims 7-9 are allowed.

10. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record does not disclose a pseudo differentiation filter constituted by a predetermined forward filter.

Response to Arguments

11. Applicant's arguments filed 6-28-06 have been fully considered but they are not persuasive. The argument that Tange does not disclose a differential of lateral displacement is not convincing because Tange calculates what lateral displacement will be versus what it currently is. This is the difference between the two, or a differential. If

applicant means to claim the formula cited in the arguments it is suggested that the equation be added to the claims.

Conclusion

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian J. Broadhead whose telephone number is 571-272-6957. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on 571-272-6956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


BJB


THOMAS BLACK
SUPERVISORY PATENT EXAMINER